



U.S. Department of
Transportation

Managing Transit Ridership with Short-Term Economic Incentives

August 1982



UMTA Technical Assistance Program

Managing Transit Ridership with Short-Term Economic Incentives

Final Report
August 1982

Prepared by
Peter B. Everett, Barry G. Watson,
and Mark D. Gurtler
The Pennsylvania Transportation Institute
The Pennsylvania State University
University Park, Pennsylvania 16802

Prepared for
Office of Service and Management Demonstrations
Urban Mass Transportation Administration
U.S. Department of Transportation
Washington, D.C. 20590

Distributed in Cooperation with
Technology Sharing Program
U.S. Department of Transportation

DOT-T-88-05

CONTENTS

Chapter 1	MANAGING TRANSIT RIDERSHIP WITH SHORT-TERM ECONOMIC INCENTIVES . . .	1
	Transit Marketing: A Contemporary Theme	1
	Focus on Short-Term Economic Incentives	2
	Goal of This Booklet	4
Chapter 2	A FRAMEWORK FOR UNDERSTANDING SHORT-TERM ECONOMIC INCENTIVE PROGRAMS	5
	Psychological Perspective	5
	Marketing Perspective	8
	Management Perspective	10
Chapter 3	WHAT ARE TRANSIT PROPERTIES DOING?	13
	Data Collection Methodology	13
	A Categorization of the Case Studies	13
	Case Studies: Descriptions and Comments	14
	Case Studies: What's Right and What's Wrong	31
Chapter 4	HOW TO DEVELOP SHORT-TERM ECONOMIC INCENTIVE PROGRAMS	35
	Statement of the Problem	35
	Description of the Current Operation	35
	Objectives of the Proposed Program	36
	Generation of Promotional Alternatives	38
	Choosing a Promotional Alternative	39
	How to Design a Short-Term Economic Incentive Program	41
	REFERENCES	47

CHAPTER 1

Managing Transit Ridership with Short-Term Economic Incentives

Transit Marketing: A Contemporary Theme

In the past few decades, the declining competitive position of public transit within the transportation market has made transit management increasingly aware of the need to adopt a new marketing orientation towards the provision of transit services. This new marketing orientation recognizes the need to find a compromise between a product orientation, which focuses on selling a standard service, and a consumer orientation, which emphasizes designing a service to meet the needs of the consumer. The orientation presented in this booklet is a compromise between these two approaches, and since it is based upon principles of behavioral psychology, it is referred to as a behavioral marketing orientation.

Several factors in the current transportation environment make either the product orientation or the consumer orientation inappropriate for public transportation management today. First, with increasing demands being placed on limited public revenues, transit can no longer be dependent on public subsidies for supporting the operation of transit services. Though it is recognized that transit management must take the needs of consumers into account in designing transit services, a consumer orientation must be tempered by the need to use public revenues more efficiently. Also, the demands for energy conservation mean that the use of energy-intensive modes of

transportation must be decreased. A behavioral marketing orientation not only recognizes the growing demands for new transportation services, but also attempts to modify demand so that existing services are utilized as efficiently as possible.

Second, with the overwhelming competition for patronage that transit faces from the automobile, a pure product orientation can lead only to further declines in transit ridership. Such a trend would place transit in the unacceptable position of providing a heavily subsidized public service for captive riders unable to pay the full cost of the service.

Third, transit is faced with complex demand patterns characterized by excess demand during peak time periods or on heavily utilized routes, and excess capacity at off-peak times or on underutilized routes. Attempts to serve the demand patterns from a product orientation leads to increasingly inefficient operations and high capital expenditures. A behavioral marketing orientation, however, emphasizes the need for ridership management, which attempts to shift ridership from time periods or routes experiencing excess demand and increase ridership at times or on routes with excess capacity. Therefore, a behavioral marketing orientation is concerned not only with providing an acceptable service and with increasing ridership and revenues, but also with improving the efficient use of the services provided.

Finally, the problems of pollution, congestion, and the need for energy conservation make transit a vital component of a thriving urban community. The importance of transit is increasing and the demands for service are growing, not declining. It is the premise of the booklet that a marketing orientation which recognizes the need to maximize efficiency in the use of public revenues, the growing demand for additional services, and the desirability of encouraging support for public transit from the private sector is the only way for transit to regain a competitive position in today's transit market.

Focus on Short-Term Economic Incentives

A variety of strategic options are available to a marketer for promoting transit service and managing ridership. This report will focus on those strategies which manipulate price in order to make transit more attractive to potential riders, and, more specifically, on short-term economic incentives. Short-term economic incentives can best be understood in the context of the traditional distinction between promotional pricing and structural pricing.

Structural pricing refers to the long-term implementation of differential pricing in the fare structure. Structural pricing changes reflect an assessment by management of relatively stable and predictable supply and demand for the transportation service. The

implementation of a reduced off-peak fare is an example of a structural pricing decision in which management decides to offer, at a more attractive rate, seats that normally would be empty.

Promotional pricing refers to a short-term pricing policy aimed at influencing consumers to try a particular product or service. The implementation of a promotional pricing program reflects a belief by management that a potential demand for a product or service exists and that once the consumer is persuaded to try the service, the demand will be maintained by the inherent incentives of the service after the promotional pricing program is withdrawn. Promotional pricing programs are widespread in private enterprise in the form of rebates and coupons for discounts on goods and services, and they are becoming increasingly popular in the transit industry.

The short-term economic incentives to be discussed in this report are an extension of the concept of promotional pricing. In the present case, however, the realm of pricing manipulations will be extended to include any measures which increase the economic value of using public transit. Consequently, not only will programs which manipulate fares directly be considered, but also any promotional programs which offer patrons other goods and services as part of their experience of riding transit. It is this broad range of pricing manipulations, both fare-related and non-fare-related, that will be referred to as economic incentives. The ability to employ non-fare-

related incentives provides the transit marketer with distinct economic advantages, since certain merchandise can often be offered on a promotional basis at much less cost and demand on administrative time than would be true for programs affecting fare levels and revenue. The use of non-fare-related incentives, such as coupons or discounts on merchandise offered in cooperation with local merchants, also permits the costs of a transit promotion program to be distributed among different beneficiaries of increased transit patronage, such as the businesses in areas served by transit. This involvement of the private sector in supporting public transit is strongly encouraged throughout this report and is seen as one of the primary purposes of short-term economic incentive programs.

It was mentioned earlier that promotional short-term economic tactics are not primarily intended to be sustaining offers which serve as the main reason for patrons' choice of transit. It is unlikely that such programs would be cost-effective in the long term. Rather, in keeping with their promotional nature, these programs are advocated to entice consumers to try transit. It is during the trial period that the potential patron has the opportunity to recognize the incentives which are on-going aspects of the product and price and which he or she would not have been able to appreciate without trying the service. The ability of the transit service to maintain any ridership changes gained from a short-term economic incentive program will determine the program's effectiveness. If the ridership

changes can be maintained, the short-term revenue losses experienced by the transit system during the promotional program will result in a long-term revenue gain after the program is terminated. Several procedures for insuring that the ridership changes will be maintained, as suggested by the principles of behavioral psychology, will be presented later in this report.

In some cases, however, these programs present incentives which are of such low cost to transit management that they can be considered for implementation in the long term. This application may be particularly effective for those market segments where modal decisions are flexible or where consideration of elasticities indicates a particular sensitivity to incentives easily provided. An example would be the management of a property's peak/off-peak ratio. Certain segments of the peak ridership are known to consist of discretionary riders whose travel behavior is sensitive to price-related changes. These riders may be less concerned with the time of their trip although they may frequently travel in the peak period for any number of minor reasons (habit, issues of convenience, etc.). An economic incentive program which, for example, offered discounts on goods and services at downtown businesses might be a sufficient enticement to shift riders from the peak period to off-peak periods if the incentives of this program (discount vouchers or coupons) were offered to riders only during off-peak periods. Whether one chooses to operate such a program in the

long term or only for a limited period is indeed a matter of local policy and most likely a function of the prevailing economic situation. If management could be confident that adequate incentives (adequate level of service, more spacious surroundings, etc.) would be discovered by riders who sampled the off-peak service, then a short-term program would maintain the desired shift. If not, then maintenance of the shift would depend upon continued offering of economic incentives (merchant discounts, for example). In those cases in which the incentive program is of low enough cost to be maintained for the long term (through private sector support, for example), the incentive program has changed from being a purely promotional pricing strategy to a structural pricing strategy. In many cases, integrating the incentive program into the structural pricing system may be the most cost-effective way to insure the maintenance of the desired behaviors.

Goal of This Booklet

It is the purpose of this booklet to give the reader an overview of the variety, type, and nature of short-term economic incentive programs that have been introduced by transit properties over the past few years. To accomplish this, first a framework for understanding short-term economic incentives is presented. This framework has been derived from psychological research and from contemporary marketing and management perspectives. Second, a group of case studies is examined and evaluated. Finally, recommendations of the best ways to implement a short-term economic incentive program are made. A decision matrix is set up to help the reader decide whether to try a short-term economic incentive program, as opposed to possibilities such as a change in service levels. If the decision favors a short-term economic incentive program, the reader then proceeds to the types of incentives to be offered, the length of time such a program should be in effect, the time and place to distribute the incentives, and the reasons for distributing them. In addition, ways are described for evaluating the effectiveness of short-term economic incentive programs and for determining the cost and benefits of such procedures.

CHAPTER 2

A Framework for Understanding Short-Term Economic Incentive Programs

A FRAMEWORK FOR UNDERSTANDING SHORT-TERM ECONOMIC INCENTIVE PROGRAMS

Before reviewing several examples of short-term economic incentive programs designed to promote transit, it is appropriate briefly to outline a framework or perspective for understanding these "case studies". By definition, promotion means persuasive communication or changing a consumer's behavior. Accordingly, this booklet will use a contemporary theory of behavior psychology developed from psychological research and practice (reinforcement theory) as one perspective from which to review and evaluate short-term economic incentive programs.

Promotion is one of the main components of the classic four components of the marketing mix: product, place, price, and promotion. Contemporary marketing theory and practice, therefore, also are appropriate as a basis for reviewing short-term economic incentive programs.

Finally, contemporary thought on management will be used to examine short-term economic incentive programs. These management perspectives include such concepts as management by objectives and cost-effectiveness. What follows is a brief overview of the concepts of reinforcement theory, marketing theory, and management practice that will be used as a framework to evaluate short-term economic incentive programs.

Psychological Perspectives

As noted above, promotion implies changing the behavior of consumers. A successful and popular theory for changing human behavior is "reinforcement theory". The promotional programs involving short-term economic incentives will therefore be reviewed, in part, according to their adherence to the known concepts and principles of reinforcement theory. These concepts will be briefly introduced below. More details on reinforcement theory can be gained from Howard Rachlin's book, An Introduction to Modern Behaviorism (1976).

Two central concepts in reinforcement theory are reinforcement and punishment. Simply stated, the consequences of a given behavior determine the probability of future occurrence of that behavior. If the presentation of an event, consequent upon behavior, increases the probability of occurrence of that behavior, that event is labeled a positive reinforcer (it strengthens behavior). For example, if an individual rides a bus and receives a cash bonus in a transit riders' lottery, and the frequency of his or her bus riding increases, the process is called positive reinforcement and the lottery prize money is labeled a positive reinforcer. It should be noted that for the present, positive reinforcer (or reinforcer) may be interchanged with the term incentive.

Punishment occurs when the presentation of an event following a behavior decreases the strength of that behavior. The event is termed a punisher and it is synonymous with the term disincentive. Receiving a fine for speeding would be a punisher or a disincentive. In summary, reinforcers (incentives) increase the frequency of behavior or strengthen it, while punishers (disincentives) decrease the frequency of a behavior or weaken it. From this point on, the terms incentives and disincentives will be used instead of reinforcers and punishers in order to be consistent with the promotional terminology. The task of predicting and modifying behaviors has been significantly enhanced in a multitude of settings with this simple perspective - the systematic observation of behavior probabilities as a function of behavior patterns and consequent events.

Two additional concepts, the schedule control of behavior and incentive delay are closely linked to the concept of reinforcement. It has been found that the probability with which an incentive follows a behavior has a significant differential effect on behavior strength. If all behaviors are followed by incentives, behavior strength (as measured by the perseverance of the behavior without incentives, for example) is usually at some intermediate level, whereas if only a certain proportion of behaviors is followed by incentives (e.g., gambling), behavior strength may be even greater. However, as the probability of incentives is thinned even further, behavior strength tends to decrease

rapidly. This phenomenon has been labeled the schedule control of behavior, namely, that behavior is strongly influenced by the schedule (frequency) of incentives.

Research on incentive delay has demonstrated that this concept has an impact on behavior similar to that of schedule control. It has been documented that the strength of behavior is significantly influenced by the temporal relationship of a consequent event following behavior. Those events occurring immediately after a behavior have the greatest chance of strengthening that behavior, while those temporally distant from a behavior have much less probability of influencing that response. In other words, incentives that occur after a protracted period do not have as much influence as do immediate incentives. For example, winning a lottery two years after purchasing a lottery ticket would not increase the purchase of lottery tickets as much as would immediate receipt of the prize.

The concept of schedule control of behavior holds true for disincentives as well as incentives. That is, disincentives which occur at different probabilities following a behavior tend to have differential impacts on the strength of the behavior. Similarly, the temporal relationship between a response and a disincentive significantly affects the behavioral impact of the disincentive, as does the temporal relationship between a response and an incentive.

Threaded throughout this discussion are the important concepts of target behavior and response contingency. Target behavior refers to the specific behavior under study, on which the behavior change strategies are focused. Response contingency is essentially the rule or the prescription which states that when a certain target behavior occurs an incentive or disincentive will follow. That is, the delivery of incentives or disincentives is contingent upon the occurrence of the target behavior. The distribution of incentives and disincentives, contingent upon a certain behavior, is what makes the incentives and disincentives such salient modifiers of behavior.

Beyond specifying the use of incentives, reinforcement theory offers two other suggestions for the task of developing a new behavior or increasing the frequency of an existing behavior. The first, called the "Premack Principle", gives insight into what might be an incentive for a given behavior by a given individual. The principle states that the opportunity to engage in behavior which occurs at a higher rate than another behavior will act as an incentive for the less frequent behavior. The opportunity to engage in the less frequent behavior, however, will not act as an incentive for the more frequent behavior. In other words, if an individual shops much more than he or she rides the bus, it is inappropriate to think that the opportunity to ride the bus will act as an incentive for

shopping; however, the opportunity to shop would act as an incentive for bus riding.

The second suggestion focuses on the task of developing new behaviors. It involves the concept of response shaping. If a transit property desires to increase bus ridership from the population of citizens that have never ridden a bus, they may have to distribute incentives for successive approximations of being a routine bus rider. In other words, it is improbable to expect the nonrider to become a routine bus rider on the first day of a short-term economic incentive program. At first the incentives may have to be focused on simply trying the bus on a special day. This might be a holiday during which parents that are not normally riders are encouraged to take their children on a special free bus trip to the zoo, for example. Then the incentives could be made contingent on trying transit for a week, then a month, and so on until the response has been "shaped" to the final desired one of being a routine bus rider.

Reinforcement theory makes several suggestions for maintaining a desirable behavior, such as bus riding, once it has been developed. First, the incentive program that originally increased ridership could be kept in place over the long run. For example, major discounts on annual passes may have to be offered into the foreseeable future in order to maintain a ridership increase. This is problematic, however, because of the program's expense. One solution would involve

the shifting of such expenses to private support such as employment or commercial centers. A transit property may be able to convince these groups that such support would indeed save them money by maintaining the viability of consumers' or workers' travel to their setting. Furthermore, a property could illustrate to the private sector the savings to be gleaned by avoiding the construction and maintenance of additional parking spaces. In other words, the transit property should consider and develop incentives that reinforce private sector involvement in programs designed to give incentives to transit riders.

If the original program of incentives for transit riders must be phased out, reinforcement theory suggests mechanisms that will favor the maintenance of the new behavior. First, the incentive procedure need not be phased out altogether, but can be changed to one of less frequent reinforcement (i.e., change the schedule of incentives). By reducing the odds of receiving an incentive, a property will save money by giving out only a fraction of the incentives, yet they may receive increased ridership as a function of the schedule control of behavior (discussed above). Yet, at the extreme, very low odds of incentive payoff will certainly lead to ridership decreases.

Finally, if a property cannot maintain the full incentive program (through such programs as private sector involvement) or if they cannot thin incentive odds to a level that is affordable, they will have to cancel the

program. At this point, reinforcement theory suggests a slow phasing out (or fading) of the incentives. Such a procedure leads to smaller behavior decrements because it allows time for the natural incentives inherent in bus riding to take over. These incentives might be reduced commuting expenses, the ability to read while commuting, or the sense of camaraderie while riding.

For a more detailed analysis of reinforcement theory perspectives on transit usage, see Everett (1981).

Marketing Perspectives

Contemporary marketing theory and practice also contribute to the framework for examining short-term economic incentives for transit promotions. Marketing theory emphasizes the four "P's" in the marketing mix-- product, place, price, and promotion. Furthermore, marketing theory specifies that, to be effective, these aspects must be dealt with in the order given. In other words, the first item to attend to is the product, the second is place, the third is price, and then comes promotion. Accordingly, a promotion will not be successful unless it is preceded by maximal attention to product, place, and price. No amount of promotion can overcome a poor product, distributed in the wrong place and at the wrong price.

Here, because of the uniqueness of transit as a product, the first two "P's" of the

marketing mix (product and place) will be replaced by the concept of service. However, the respective order still holds: service first, then price, then promotion. Throughout this booklet, comments on the case studies and on transit promotion in general will reflect, in part, the marketing perspective that promotion should occur only after the transit service and its related price are considered to be satisfactory.

The relationships between service, price, and promotion are not strictly sequential, however, and this emphasis on an order of importance should not obscure the fact that these elements of the marketing mix interact with each other. This dynamic relationship has implications for the design of marketing programs. First, changes in these elements should not be made in isolation, but should take advantage of the synergies resulting from the concurrent modification of service, price, and promotion. Obviously, promotion, including short-term economic incentives, can be used to maximize the response to other marketing programs, as well as to minimize the negative effects of undesirable changes in service or price. Also, price promotion strategies can be used in combination with other marketing strategies to measure the penetration and response to the marketing programs. For instance, free coded tickets can be distributed with route and system maps to measure the use and distribution patterns of the information aids.

Beyond the concept of the marketing mix and

the importance of the relative order of its elements, marketing theory offers another important message--that of market segmentation. Different subgroups of consumers (or segments) are differentially responsive to various products and places (service), prices, and promotions. For a marketing program to be successful, these segments should be understood and the variables of the marketing mix adjusted accordingly. Common ways of understanding market segments include the gathering of demographic data, survey research, past histories of various markets in regard to certain marketing mixes, and test market research.

There is a substantial literature on the responsiveness of different population segments to transit service and price changes. A recent summary of the transit service and fare elasticities by Mayworm, Lago, and McEnroe, Patronage Impacts of Changes in Transit Fares and Services, notes that some market segments are particularly sensitive to service changes and not to price, while other groups are more sensitive to pricing manipulations. In the later review of case studies, it will be noted whether or not the short-term economic incentive programs considered the elasticities of various market segments to economic variables.

For a more detailed account of marketing in general, see Kotler (1976), and specifically on marketing in the public sector, see

Kotler's book, Marketing for Nonprofit Organizations (1975).

Management Perspectives

The third contribution to the framework for evaluating short-term economic incentives for transit promotion stems from contemporary management practices. The concepts of management by objectives (MBO) and program cost-effectiveness are of particular importance in this context.

MBO is particularly relevant to short-term economic incentive programs. Specifically, MBO asks, what were the objectives of various case studies and were these objectives met? The MBO perspective overlaps nicely with the concept of target behaviors that was introduced earlier. For example, did the various programs specify the amount of behavior change expected?

The MBO perspective also requires that programs be evaluated. If data are not collected, it is impossible to tell whether program goals and objectives have been met. Of equal importance, evaluation will help pinpoint which programs or elements of programs are working and which are not. This understanding of the saliency of various attributes of short-term economic incentive programs is immensely valuable for the design of future programs.

Cost-effectiveness considerations are

important when evaluating transit promotional programs involving short-term economic incentives. This is particularly true because, compared with some promotional endeavors (e.g., publicity), short-term economic incentives are quite expensive.

On the cost side of the ledger, particular attention should be paid to the time required of management to implement, maintain, and monitor the economic incentive program. The revenue lost as a result of programs that reduce fares is also important. Those programs that maintain farebox revenue while distributing economic incentives of another nature will be particularly commended. For example, a transit property might give riders tickets that would be good for discounts at local merchants. Riders would still pay their normal fare (thus maintaining fare box revenue) while receiving the economic incentive of discounts on merchandise. Furthermore, if the product discounts are contributed by local merchants, costs to the property are reduced drastically. Merchants would gain additional patrons while obviating the costs of providing additional parking.

A final item on the cost side of the balance sheet is labor. If an organized work force requires additional benefits to help monitor an economic incentive program, the program will become more costly. Innovative labor-management relations can usually circumvent this cost.

Several items on the effectiveness side of the balance sheet may cancel or outweigh the costs of a short-term economic incentive program. The most tangible of these are the short-term and long-term changes in ridership characteristics. A short-term economic incentive program may indeed be a deficit operation for the few weeks of its implementation. But this loss has to be balanced against desired changes in long-term ridership patterns. For example, is there a significant and maintained increase in fare-paying passengers one year after a major short-term economic incentive program? Or did a property realize a shift in peak to off-peak riders so it now experiences increased capacity during the peak period?

However, the effectiveness of a program in achieving purely transit system oriented objectives may not be the only, or even the best, indicator of the success of a program. It is important that benefits of the program be realized by all of the groups involved--merchants, local officials, and riders. The potential benefits for these groups should also be recognized and encouraged, and attempts should be made to monitor the degree to which these benefits are

realized. A successful program which results in large ridership increases but offers no benefits to other participants will have difficulty garnering support in the future.

Beyond the tangible effectiveness indicators (such as ridership), a property may realize objectives not so easily measured. For example, a promotional program using short-term economic incentives may increase the public's knowledge and awareness of transit and, in turn, improve their ability to use it more efficiently. Furthermore, an economic promotional program may increase the public's acceptance of transit, and citizens may be more willing to vote for a transit referendum when it appears on the ballot.

In sum, the framework suggested in this chapter will be applied to the case studies to be reviewed. Comments will be made as to the saliency of the short-term economic incentive programs based on the psychological principles of reinforcement theory, their adherence to the concepts of the marketing mix and market segmentation, and their accountability according to the contemporary management perspectives of management by objectives and cost-effectiveness.

CHAPTER 3

What Are Transit Properties Doing?

WHAT ARE TRANSIT PROPERTIES DOING?

Many promotional programs which involve the manipulation of short-term economic incentives in some form have been implemented by transit systems. Fourteen case studies have been selected for detailed review both to illustrate the use of incentives and to highlight the more successful methods by which reinforcement theory might be integrated with modern marketing and management approaches.

Data Collection Methodology

Case studies were chosen after inquiries were sent to marketing departments at fifty-eight transit systems across the United States. Transit properties were selected by reviewing reports of incentive programs in Passenger Transport and by suggestions from UMTA and management personnel at the various properties contacted. Systems were selected on the basis of the past performance of their marketing efforts. It was not the intention of this investigation to extrapolate any of its findings to transit properties not contacted, but rather to present a group of illustrative examples. The studies presented are not strictly examples of successful programs, but were chosen to demonstrate the range of incentive programs that have been implemented.

In most of the properties contacted, the director of marketing, or the manager responsible for the marketing function, was

contacted directly. In only a small number of cases did information have to be obtained through other employees in the marketing department.

An in-depth, unstructured interview was conducted by telephone, usually lasting twenty to thirty minutes. Questions were asked about promotions that had been carried out within the past one or two years which in any way involved price-related promotional incentives. Details of the operation of these promotions as well as any methods used in evaluation were obtained. Additionally, general information was obtained about the marketing department: how promotional goals and objectives are determined, how promotions are developed, etc. Supplementary information was obtained from trade publications (e.g., Passenger Transport) and U.S. Department of Transportation research reports.

A Categorization of the Case Studies

Each of the case studies was categorized according to three considerations: (1) whether the incentives used in each program are fare-related or non-fare-related, (2) the probability that the patron will actually receive an incentive and (3) the specific behavior which must be performed by the consumer before he or she receives the incentive (target behavior). Table 1 indicates the characteristics of each case study according to these three dimensions. The promotional program is identified by the

city or region involved, and the page on which the details of the promotion are presented.

The first categorical dimension derives not from reinforcement theory, but from an important managerial consideration discussed in Chapter 1. Although all incentives considered in this study are economic incentives, they differ in their relationship to fares. Some are clearly fare related (e.g., free fare, reduced fare, a ticket for a future ride), while others are not related to the transit fare (e.g., a coupon good for reductions in the price of merchandise). Non-fare-related incentives have been represented by a variety of goods and services and are virtually limitless. The choice of fare-related or non-fare-related incentives has important consequences for the revenue status of the property and will vary with each situation. A transit operation may have low ridership and excess capacity on a certain line. If management is confident that any fare reductions offered in a promotion would be unlikely to be used by riders who would otherwise have been willing to pay full fare, then such incentives can be provided at a negligible cost.

Each of the case studies may also be classified according to the probability that the individual will actually receive an incentive if he or she performs the desired behavior (the principle of schedule control of behavior). Programs that yield an incentive to the consumer every time the behavior occurs will be noted as 100 percent receipt of

incentive. Those programs that give less than a 100 percent chance of receiving an incentive (e.g., every fifth bus rider gets a free bus ride) will be referred to as odds on receipt of incentive. Even very high value items could be considered if patrons were offered either chances at obtaining the item or a small percentage reduction in the cost of the item. For example, the schedule of incentives could be controlled by distributing lottery tickets to transit patrons, varying the probabilities of winning certain prizes. Care must be taken, however, that the chance of winning does not seem too remote, which would weaken the program's effectiveness.

The second type of classification suggested by psychological theory relates to the nature of the behavior the consumer must perform before receiving the incentive. The case studies examined in this investigation fell into several categories: those rewarding the behavior of boarding the bus, those providing a reward for buying a pass or advance or bulk purchase of transit in some form, those rewarding the joint behaviors of bus riding and shopping at a merchant's store, and those rewarding other behaviors (such as shopping).

Case Studies: Descriptions and Comments

A. 100 Percent Receipt of Non-fare Incentives Iowa

An innovative incentive program aimed at fourth to sixth grade students, whose attitudes towards public transit are generally

Table 1. Categorization of the case studies according to the nature of the incentive and the behavior for which it was received. Case studies are indicated by city or geographic region. Numbers in parentheses indicate the page on which details of the case are presented.

INCENTIVES				
N O N - F A R E			F A R E	
TARGET BEHAVIOR	100% receipt of incentive	Odds on receipt of incentive	100% receipt of incentive	Odds on receipt of incentive
Ride the bus	Iowa (13) Spokane (18)	Des Moines (20) Duluth (21) Portland (22)	Salem (24) University Park (26) State College (27)	Pittsburgh (29)
Buy a transit pass	Portland (15) Bridgeport (19)			
Ride the Bus AND visit merchants	Chicago (17)	University Park (23)		
Visit merchants		Portland (22)	Knoxville (28)	

neutral, has been designed for use by Iowa properties. Much of the program involved materials designed to teach young potential riders about proper bus behavior, safety practices, and concepts of energy use and conservation. But a significant part of the package included tickets for a 100 percent guarantee of a non-fare incentive. A variety of items were designed to appeal to the youngsters (buttons, pencils, reflective patches, and T-shirts, with each one of the items displaying the "transit tiger", a colorful cartoon character wearing a bus driver's hat). These incentives could be earned by children in the program who rode the bus a certain number of times.

Through the school program, each student was issued a "bus ticket". The ticket was not an entitlement to free transit, and regular fare had to be paid. However, the ticket was punched by the driver to indicate that the student had ridden the bus. When the prescribed number of rides had been punched, the ticket could be presented at the transit property office in exchange for prizes.

The program provides a clear example of incentives for a particular behavior, in this case, riding the bus (the target behavior). The behavior is well defined and the offer of incentives is closely associated with the behavior. That is, the receipt of the prize was contingent upon the children riding the bus.

It may be noted that the actual prize was

collected by the students at the transit system office. Practicality and constraint on operators' time precluded the optimal situation where the incentives were made available on the bus itself.

Particular note should be made of the effort to identify the market segment in the present case. The program was clearly directed towards the homogeneous population of younger students who are likely to have open attitudes towards transit and for whom such a program would be expected to have maximum impact. The utility of market segmentation is also seen in determining the nature of the incentive to be used in the promotional program. Coloring books, T-shirts, and patches are choices which would broadly appeal to this group.

Portland, Oregon

Through a tie-in promotion with a national fast-food chain, Tri-Met in Portland, Oregon, has successfully used a non-fare-related incentive to increase the sale of passes. A coupon good for two sandwiches for the price of one was given to each purchaser of a pass. The coupon was received at the time the pass was purchased and could be redeemed immediately. The objective of this effort was to generate transit and fast-food chain awareness and to create "repeat consumer habits" within a defined market. The program was designed to mutually benefit the transit property and the fast-food chain at nominal expense and at a

time when the transit system could expect decreased ridership and the development of unfavorable consumer attitudes as a result of a fare increase and the implementation of an exact-fare system.

A significant advertising effort was mounted to inform the consumers of the offer. "Queen-sized" bus signs incorporating the fast food chain logo and the message "Ride the bus, have two meals on us..." were placed on fifty buses. One hundred 10-second radio spot-tags were broadcast with the tie-in message, "When you purchase a monthly pass, we will treat you to...." Posters were placed in the lobby of five franchise locations incorporating the messages of both the fast food chain and the transit property. Concurrently, the on-bus signs notified patrons of the exact fare policy about to begin and of the availability of monthly passes.

At the same time, an effort was made to increase the sales of weekly pass booklets to school children. Approximately seventy-five bus cards were mounted in vehicles which transported school children and included the message, "Ride the bus and have a soft drink on us." In effect, with the purchase of the weekly booklet, each student received a coupon for a regular-sized soft drink or hot chocolate.

As a result of the two-month promotion, monthly pass sales increased by 3 percent while the weekly pass sales increased by 200 percent. These effects are particularly



Figure 1. Coupon used in Tri-Met's fast food promotion.

dramatic when it is noted that the promotion took place during the introduction of an exact-fare policy and a price increase -- a period when a decrease in ridership would normally be expected.

In the case of each pass sales program, the target behavior can be clearly identified as the purchase of passes, since the offer of the incentive was made immediately after the behavior occurred.

This program illustrates how attention to the market segment can be of advantage in designing promotions. In the case of weekly passes, emphasis was placed on purchases by school children, and advertising efforts were appropriately concentrated on those buses heavily traveled by the children. Similarly,

the choice of the incentive and its magnitude (i.e., one regular-sized soft drink) appears to have been made with regard to the target population.

The magnitude of the incentive also was tied to the amount of the purchase. Two sandwiches were offered in the case of the monthly pass purchase, while a soft drink was offered for the purchase of each weekly pass. It seems reasonable that an incentive of greater value is necessary to change more resistant behaviors, that is, behaviors having higher cost to the individual. Since no clear rule of thumb exists, the promotional manager is left to use his or her judgment about the appropriate magnitude of the incentive in a particular situation.

Because of the complexity of the circumstances under which this promotion was undertaken (the concurrent fare change), it is difficult to attribute the changes in pass sales specifically to the tie-in program. Management was pleased, nonetheless, and was confident that the program had been successful.

Chicago, Illinois

In a joint venture between the Regional Transportation Authority and the Portage Park Chamber of Commerce in Chicago, Illinois, riders to the 6 Corners shopping area were offered tokens good for discounts on a wide variety of goods and services. This program is an example of a 100 percent guarantee of a non-fare-related economic incentive when the

patron both rode the bus and shopped at participating merchants. Upon presentation of a transit transfer, which could be purchased from the driver for 10 cents if the rider did not take two buses to the destination, riders making a purchase of \$5 or more at any of more than thirty participating merchants received a high quality brass token worth either 50 cents or one dollar. Purchases of \$5 to \$9.99 earned one 50-cent token while purchases of ten dollars or more earned a one-dollar token. Tokens were not redeemable for cash, but represented their monetary face value and served as currency to pay for additional merchandise from participating 6 Corners merchants. Tokens could be accumulated and applied in any quantity towards a purchase.

In an experimental trial of the concept, participants felt that the program had merit, although the expected benefits in ridership and retail sales did not occur. It was felt by RTA that several errors in judgment had been made in this complex promotion that prevented realization of its full potential. A larger number of stores (perhaps 100) appears to be necessary for an adequate promotion, and the involvement of a major "anchor" store may be essential. A program which is very simple from the perspective of the patron is critical, and care must be taken to avoid confusion. In this case, RTA riders experienced considerable confusion and frustration regarding what must be done to receive and to exchange the tokens.

Get your INTRADE Tokens each day
by using the RTA

Present valid RTA/CTA Transfer
to participating merchants
at 6 CORNERS.

Sponsored by
Heritage Park Chamber of Commerce



Figure 2. Bench ads used in the 6 Corners promotion.

Spokane, Washington

Two demonstration programs sponsored by UMTA's Office of Service and Management Demonstrations are excellent examples of both the application of the behavioral principles discussed in Chapter 2 to specific transit problems and of the potential for public and private sector cooperation in addressing these problems. These two projects are the Mid-Day Rider program in Spokane, Washington, and the Value Fare program in Bridgeport, Connecticut.

The Mid-Day Rider program being conducted by the Spokane Transit System (STS) is using non-fare-related incentives to promote ridership during off-peak hours. All riders boarding an STS bus between the hours of 9:15 a.m. and 2:00 p.m. receive a ticket from a dispenser located behind the bus driver. The tickets can then be redeemed for discounts on goods and services offered by participating merchants. These discounts are fully subsidized by the participating merchants.

WITH 4 TICKETS **GET AWAY PACKAGE \$30.00 PER NIGHT**

Minimum two nights
Call for reservations: 455-9600


Sheraton Spokane Hotel
Spokane Falls Court



WITH 1 TICKET **ALOE VERA JUICE 30% DISCOUNT ONE QUART**

A unique vegetable liquid, cold pressed to retain all the natural vitamins, minerals, amino acids and enzymes.

GOLDEN IMAGE Paulsen Building



WITH 1 TICKET **\$1.00 OFF PICTURE WITH SANTA**

Have your picture taken with Santa and take them home the same day. Two beautiful color pictures in Santa frame folders.

1 HOUR 1 PHOTO Skywalk Level
River Park Square
Down hall from Nordstrom's



WITH 2 TICKETS **15% OFF ANY GIFT BOX 1 LB. OR MORE**

Applies to wide assortment of our ready-made Christmas gift boxes.

Barham's Candies River Park Square
Skywalk Level
between Crescent & Nordstrom



Figure 3. Excerpt from the "Special Discount List" used in Spokane's Mid-Day Rider program.

Every month, a "Discount Special List" with the participating businesses and the discounts available for the month is distributed on all STS buses. After 9 months of operation, more

than 100 businesses offer discounts, with an average value of approximately \$1.50 per ticket. Merchants are free to offer larger discounts that may require 2, 3, or more tickets. In fact, it is desirable that a variety of discounts be available, with both high value discounts requiring several tickets and lower discounts requiring only one ticket. Currently, approximately 12,000 tickets per month are exchanged at participating merchants and off-peak ridership is up by six percent.

To insure that the program is responsive to the needs of both STS and the business community, a Business Advisory Board consisting of representatives from participating businesses and STS was formed. The Advisory Board provides a forum for interaction between STS management and participating businesses, permitting continuous feedback on the performance of the Mid-Day Rider program. The feedback from the Advisory Board is also supplemented by information from surveys of participating businesses, permitting STS to monitor any potential problems and check preliminary results on the effectiveness of and satisfaction with the program. Also, the Advisory Board must approve all proposed discounts for each month, insuring that the consistent quality of the program is maintained. Plans are now underway to increase the number of participating merchants by extending the program city-wide, and to include evening hours (6:15 p.m. to midnight) and weekends in the program.

Bridgeport, Connecticut

In Bridgeport, Connecticut, the Value Fare program uses non-fare-related incentives to promote the sales of transit passes and tokens. Like the Mid-Day Rider program, tickets redeemable for discounts at local businesses are used as incentives. Every person purchasing a ten-pack of tokens for \$6 receives five discount coupons worth \$5 or more at local businesses; each purchase of a monthly Commuter Pass for \$23 or Fare-Cutter Card for \$15 is accompanied by 20 discount coupons, a value of \$20 or more. The discounts being offered each month are published in the "Merchant Discount List", which is available at all pass sales outlets and on all of the Greater Bridgeport Transit District buses.

The Value Fare program is a good example of the use of an incentive program in combination with other marketing efforts. In addition to the Value Fare, efforts have also been directed at increasing the number of sales outlets and implementing a mail order system, and encouraging pass purchases by employers and other organizations. These improvements in the entire pass sales program have resulted in pass and token sales increases of approximately 18 percent. The number of merchants participating in the Value Fare program has increased from 30 in the beginning to 94 after six months of operation. The effect on pass sales is expected to be even greater as the distribution network is improved.

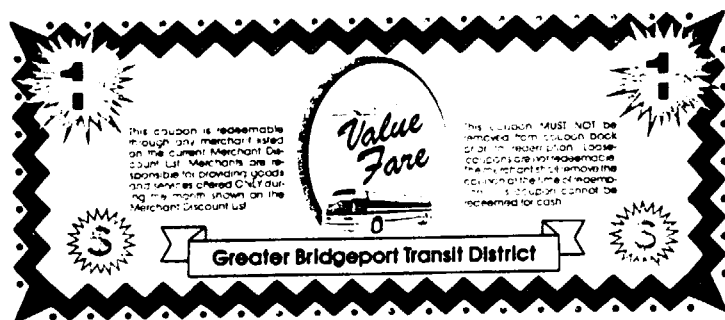


Figure 4. Coupon used in Bridgeport's Value Fare promotion.

Two features of both the Mid-Day Rider and the Value Fare programs are particularly noteworthy. First, both programs were designed so that the reinforcers were delivered immediately upon the performance of the target behavior (either riding the bus during the off-peak hours or buying a pass). Recall from Chapter 2 that immediate incentives have a much greater effect on the behavior than incentives which are delivered after a long delay. Also, the delivery of the incentive is clearly contingent upon the performance of the desired behavior.

Even more important, however, is the aspect of reciprocal reinforcement designed into both

of the programs. In other words, the programs are designed so that all parties involved receive benefits resulting from their participation. The riders benefit by receiving discounts at local merchants. The merchants get free advertising as well as the potential for increased store traffic and sales. And the transit properties benefit through inexpensive marketing, increased public awareness and support, and increased ridership and fares. By making these mutual benefits an integral part of the programs, the likelihood that the programs will succeed and be maintained for the long term, independent of research funds, is greatly enhanced. Currently, both Spokane and Bridgeport are considering strategies for private enterprise to take over these programs. It is projected that private management could profit by selling advertising space on the ticket exchange sheets to the participating merchants.

B. Odds On Receipt of a Non-fare Incentive

Des Moines, Iowa

In Des Moines, Iowa, the metropolitan transit authority developed a program to encourage off-peak ridership. In conjunction with a local radio station, off-peak buses were intercepted, without warning, by the brightly marked radio station van. At that time everyone on the bus received a prize ranging in value from the cost of a hamburger to \$10. Management chose those routes which

were poorly patronized during the off-peak period for potential reward.

This program was very inexpensive for the transit property because of the advertising and publicity contributed by the radio station. Patrons were well aware of the program and knew that if they rode in the off-peak period there was some chance of winning a prize. Since riders did not know in advance which bus would receive the incentives that day, the theoretical perspectives presented earlier suggest that this "odds on" procedure (use of schedule of incentives) would result in higher levels of ridership at a more economical cost than would a program which provided incentives 100 percent of the time. The designers of the program were successful also in maintaining a close association between the specific behavior of concern (riding the bus) and the receipt of the incentive, since the prizes were available only on the bus.

Management felt that this program had been effective in increasing ridership 10-25 percent, although the effects were transient and patronage returned to the original levels when the promotion ended.

Duluth, Minnesota

The Duluth Transit Authority implemented an incentive program designed to increase student ridership (at a time of the year when weather caused a continual ridership decline) and to generate a level of awareness of mass

transportation within an age group seen as the decision-making citizens of the future.

The promotion was based on a contest among the several junior high schools in the area. Ridership coupons were issued to the students through their schools. A coupon was turned in to the bus driver, along with the fare, each time a student rode the bus. All fares, whether passes, tokens or cash, were eligible. The school with the greatest ridership (based on student enrollment) during a one-month period won a spectacular "Rock Night", which included dance contests, prizes, refreshments and radio disc jockey personalities providing a disco atmosphere.

To create awareness, interest and participation, attractive information posters were displayed in the schools. Every week a chart was updated so that the students could see where their school stood compared with other schools. Flyers announced the contest and a radio station promoted the contest heavily. Each evening a disc jockey broadcast from a bus giving away prizes to junior high school passengers. These items included movie passes, record albums, and skateboards -- all appealing gifts for this age group.

This promotion took advantage of the concept of market segmentation by choosing optimal incentives for the specific group (target population) involved. The magnitude and type of the incentives in this case were particularly suited to the student group and can be considered large enough to be an

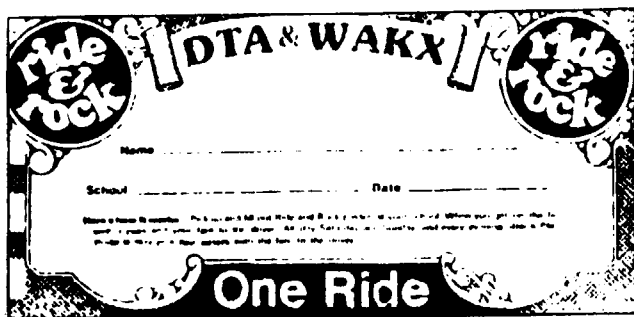


Figure 5. Ride coupon used in Duluth promotion.

incentive to ride the bus. In the case of the prizes given away by disc jockeys on the bus, the association between the incentive and the behavior is ideal: only riders have the opportunity to get an incentive and the distribution of the incentive was immediate. In the case of the contest and the reward of the "Big Bash", sufficient publicity and awareness seem to have kept the association with transit riding foremost in the students' minds. It is ideal, as well, that the specific behavior of bus riding was required in order to receive a chance to win the party. An interesting sidelight is that on weekend evenings, when social pressures and other factors might give private automobiles particular advantage over transit, the drivers of the buses allowed any student to turn in two coupons for each ride, offering even greater encouragement to students to ride transit on weekend evenings.

The promotion took advantage of group and peer pressure within an environment where everyone's performance and behaviors were observable by others in the group. This incentive program is an innovative example of the successful integration of effective advertising and other promotional tactics.

Portland, Oregon

Portland, Oregon, instituted a program that gave tickets for odds on a non-fare incentive. The consumer could do one of two behaviors to receive entry blanks: (a) board a Tri Met bus or (b) enter participating stores. Therefore, in Table 1, the project is categorized under both target behavior headings "Ride the bus" and "Visit merchants". Using the theme "Ride the bus and win a car," consumers were encouraged, upon boarding buses, to pick up entry blanks which would give them a chance to win a car or one of several \$20 gift certificates. As part of an involved tie-in scheme to maximize advertising and promotional value, entries had to be validated and submitted at the shops of participating downtown merchants. Store owners benefited from publicity and direct advertising as well as from the increased traffic generated by patrons depositing entry blanks. In return, the merchants contributed the gift certificate merchandise and agreed to purchase radio time to advertise the program. A local radio station was willing to contribute the car together with a significant publicity offering in recognition of the substantial visibility generated by the scheme. The station also

Win a  **on the bus!**
An AMC Spirit,
to go where Tri-Met doesn't.
 Or, win a \$25 gift certificate from participating merchants.
 Tri-It/Try-Us Sweepstakes.

For details listen to  **KPAM** 97fm 14am

Entry blanks are available on Tri-Met near your driver.

Figure 6. Advertising used in Tri-Met odds-on promotion.

benefited from a number of bus cards promoting the radio station and the inclusion of its call letters and logo on the bulk of the printed contest material.

Unfortunately, as a trade-off for promotional cooperation in this particular program, some diffusion occurred in terms of the association of the incentive with the behavior of riding the bus. Because the car or cash prize incentive was associated with shopping and with the radio station, one might expect that the full potential of the

promotion to increase ridership was not realized. In the present case, however, this diffusion of the effects was adequately compensated for by the cooperation of merchants both in good will and in material contributions to the program.

The promotion represents a successfully integrated effort maximizing the available marketing resources and capitalizing on publicity opportunities. It is rather odd, however, that an incentive for using transit was a car. Does this mean that the winner will no longer have to use transit?

University Park, Pennsylvania

A program using coupons for goods and services distributed in such a way that patrons had varying probabilities of receiving the incentives has been tried in University Park, Pennsylvania, on a four-bus campus system serving 30,000 students and 6,000 faculty and staff. Approximately every third rider was given a token immediately upon boarding the bus. In addition, the promotion contained one period when no tokens were distributed and one when all patrons received tokens, permitting the explicit evaluation of the differential effects of varying the frequency with which incentives were delivered (schedule control of behavior). These tokens could be redeemed for a variety of goods and services, according to well-publicized exchange rates. Riders were allowed to accumulate tokens for merchandise of greater value or to use single tokens to get smaller

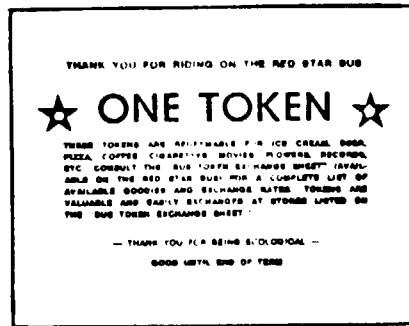


Figure 7. Token used in University Park project.

items. Local merchants agreed to act as brokers for the program and exchanged tokens for candy bars, draft beer, hamburgers, record albums, and so forth. Merchants were reimbursed for each token redeemed, although often at a discounted rate because of the advertising benefits of being involved in the program and the increased store traffic generated by patrons coming to their stores to exchange the tokens.

This method of distribution is congruent with the concept of schedule control of behavior in psychological research which suggests that when odds on an incentive are offered, increases in behavior can be expected which are as great or greater than those which result when every desired behavior earns an incentive.

Data collected during the course of this

program provided evidence to support the application of this principle. Ridership levels were compared for periods when no tokens were distributed, when all riders received a token, and when on the average every third rider received a token. From Figure 8 it can be seen that the tokens effectively increased ridership by almost one third, although no significant difference in ridership can be detected between the days on which all riders received tokens and those on which only every third person received tokens. While the effectiveness of the procedures is comparable, the costs vary dramatically. Indeed, certain administrative costs would remain constant, but the specific costs of the tokens could be reduced by at least one-third without a decrement in effectiveness.

C. 100 Percent Receipt of Fare-Related Incentives

Salem, Oregon

The Cherriots Commuter program instituted in Salem, Oregon, represents a program where participants have a 100 percent chance of receiving the value of future rides. This promotion attempted to have employees in the central business district (CBD) shift their commuting patterns away from the private auto in favor of the twenty-five-bus system serving the population of 85,000. Through the Cherriots Commuter Club, special monthly passes were provided to businesses, firms, and agencies with twenty or more employees.

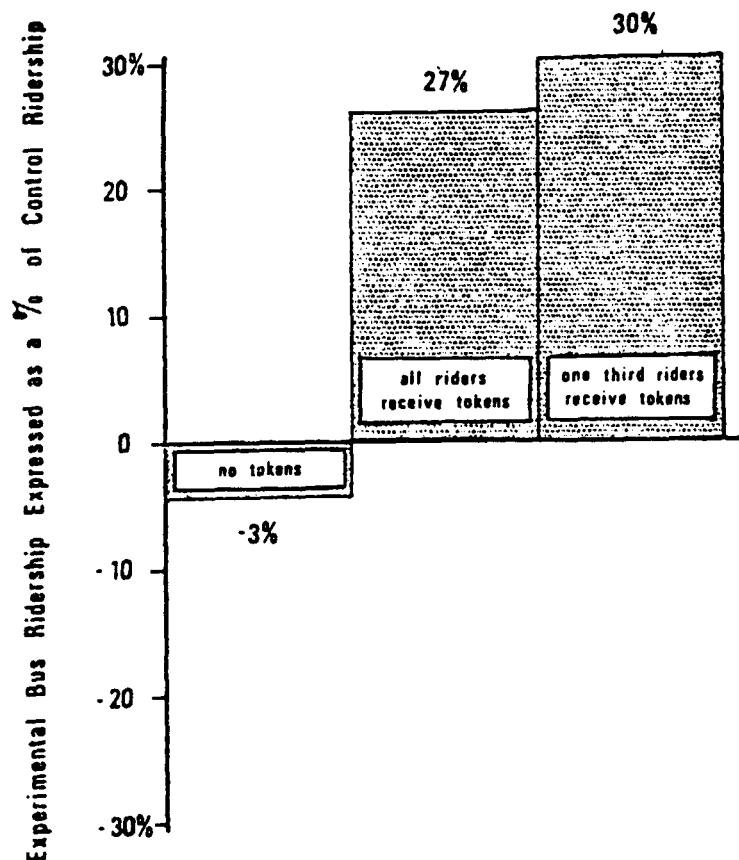


Figure 8. Changes in bus ridership under conditions of no token incentive, one out of three riders receiving tokens, and all riders receiving tokens.

Persons in smaller businesses who wished to participate were asked to contact a municipal

office directly. The pass allowed no more than two rides per weekday and was punched by the bus driver each time it was used. Patrons were encouraged, by the incentive of further free transit, to use the pass rather than drive their cars into the CBD. For those whose pass was punched for at least two-thirds of its full use during the preceding month, a new free pass, at no cost, would be issued for the next month. In other words, for having commuted predominantly by transit, patrons received the incentive of more free transit. The commuter card provided the users with a highly visible reminder of their progress towards the next month's pass, and the requirement for the incentive was clear-- a specified number of commuter trips.

This program was heavily promoted among employers in the central business district. Although expensive, the program was thought by its organizers to have been successful in reducing the specific problem of employee traffic congestion in the downtown area. In the first months of operation, passenger and revenue data indicated that 870 routine trips to and from work were added by new riders. This program could have been made more cost-effective by requiring that patrons pay for the commuter card but receive a discount on their next pass if they had used transit for a sufficient number of their work trips. Alternatively, employers, who are indirect beneficiaries of increased transit use because of decreased parking costs or higher employee productivity, could help subsidize the cost of the passes.

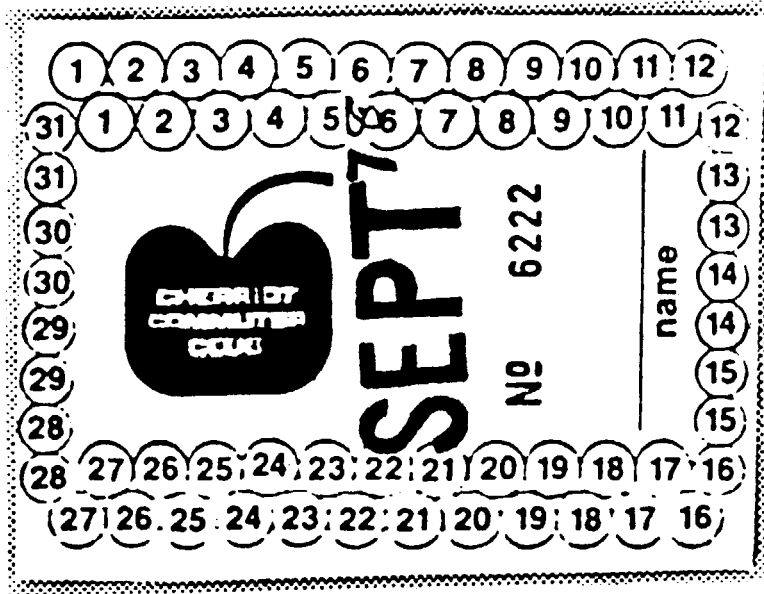


Figure 9. Pass used in Salem promotion.

University Park, Pennsylvania

Another program that gave a ticket for a 100 percent fare-related incentive to consumers boarding a bus was also carried out on the University Park, Pennsylvania, bus system. Potential riders (individuals living along a bus route) were mailed coupons that were exchangeable for free bus rides. The unique aspect of this project was that additional free-ride coupons were given to individuals contingent upon their using the initial coupons. This program was similar to

the Salem, Oregon, program described above in that patrons were rewarded for using transit with additional free ride coupons.

Each subject in two treatment groups was mailed twelve coupons good for free rides on any bus. These coupons were good for the next nine consecutive days. The two groups differed in the following ways. For one group, the twelve initial coupons stated (on each coupon) that after the nine-day expiration period, each subject would receive twelve more coupons in the mail regardless of how many times they rode the bus during the initial nine days. For the next group, each coupon stated that for every coupon of the initial twelve used, each subject would receive one additional coupon in the mail at the end of nine days.

Figure 10 summarizes the results of this project. The ride-contingent free transit conditions yielded a significantly greater ridership than did the condition where riders received coupons regardless of whether or not they rode the bus.

These results suggest not only that free transit increases ridership, but also that the method of free transit distribution may significantly modify ridership levels. It appears that when free transit depends upon the behavior of bus riding, it is more successful in increasing ridership than are typical free transit programs in which the doors of the bus are open to all takers. As opposed to a mail distribution program, it

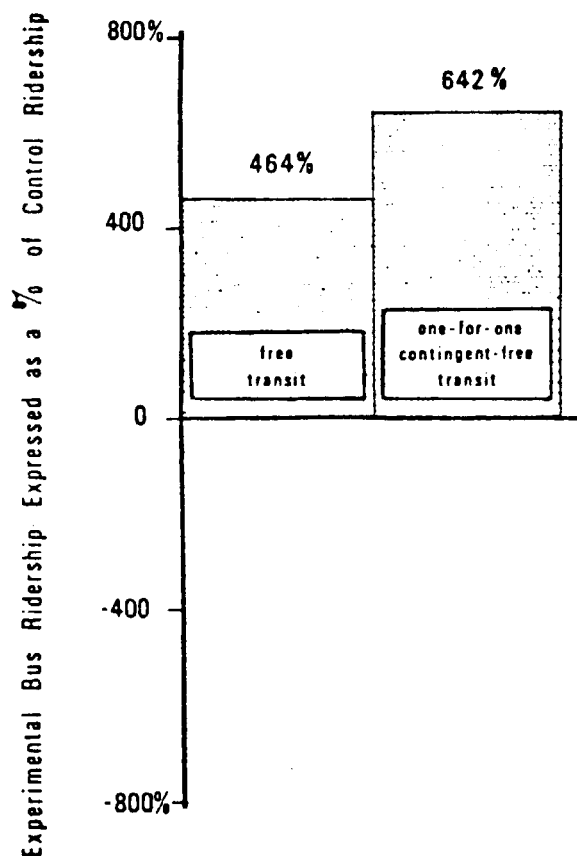


Figure 10. Changes in bus ridership under conditions of free transit (not contingent) and one-for-one contingent free transit.

would be quite easy to distribute free transit coupons to passengers immediately upon their boarding a bus (in a fashion similar to

distributing a transfer) or by punching a pass, as was done in Salem, Oregon.

State College, Pennsylvania

Another example of providing a 100 percent guarantee of fare-related incentives was carried out in State College, Pennsylvania, a university community of approximately 60,000 residents served by an eighteen-bus system. A packet of promotional materials was mailed to 2600 households within two blocks of a new transit route. The packet explained the details of the new service (map, schedule, and fare information), and also contained tickets for free rides. To determine the most effective procedure for distributing this sort of incentive, the potential patrons were divided randomly into four groups. Group one received five free ride coupons good for the next five consecutive days. Group two received five free ride coupons good for the next fifteen consecutive days. Group three received fifteen free ride coupons good for the next five days, and group four received fifteen free ride coupons good for the next fifteen days.

Figure 11 shows that independent of the group, ridership increased 58 percent above original levels. This compares to an average ridership increase of 16 percent on the four buses on control routes.

Figure 12 illustrates the impact of the various treatment conditions. The schedule leading to the highest proportion of bus rides

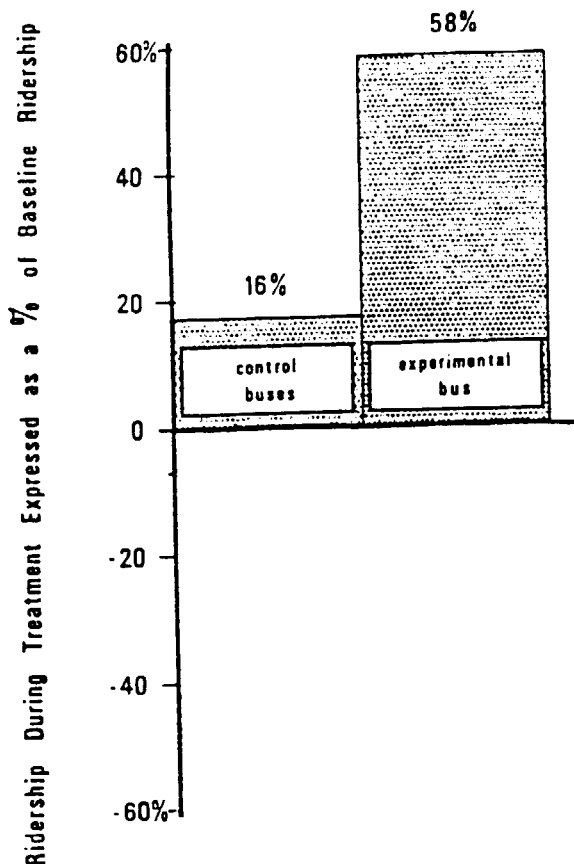


Figure 11. Changes in bus ridership under conditions of no free ride coupons (control buses) and free ride coupons (experimental bus).

to coupons distributed was five coupons for fifteen days. The group of households

receiving fifteen coupons good for five days exhibited the least transit use in proportion to the number of coupons they received. These results offer insight into the most effective free ride program to implement. If a transit system is concerned about the greatest impact per free ride, then the distribution of a fewer number of coupons which are good for a longer period of time is most appropriate. However, on an absolute basis (independent of how many coupons were distributed), the greatest number of rides was generated by the group holding fifteen coupons good for fifteen days.

From a management perspective, this type of promotion can be quite cost-effective. The cost of the incentive to the property is very low early in the development of a route, when ridership is traditionally low and extra capacity exists. The availability of computerized mailing lists covering highly specific geographic regions (e.g., within two blocks of a route) allows effective market segmentation at reasonable cost. In areas where such services are not available, distribution through school groups, newspaper carriers, and newspaper flyers are also economical alternatives.

Knoxville, Tennessee

A demonstration currently under way in Knoxville, Tennessee, revives the type of incentive program popular in the 1950s and

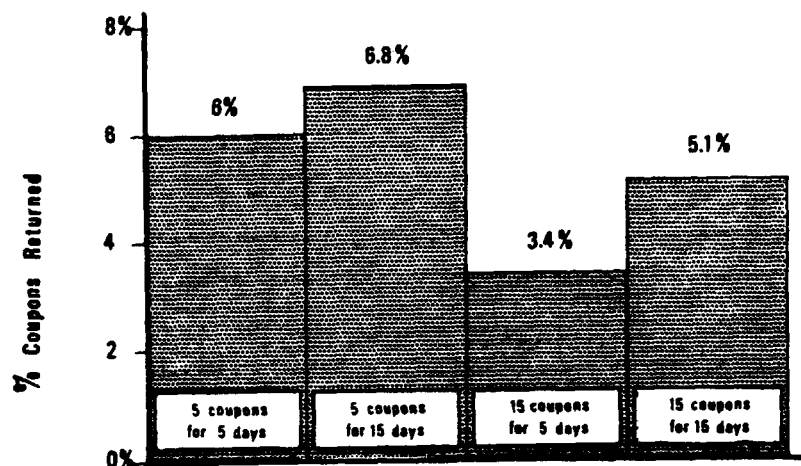


Figure 12. Percent of coupons returned under four different conditions varying the number of coupons distributed and the length of time during which the coupons were valid.

early 1960s as a mass transit promotion. This type of program also parallels the practice of many merchants, of offering free parking to patrons by validating their parking receipts. The Knoxville program provides the patron of the central business district with a 100 percent guarantee of a fare-related incentive. Those who patronize participating merchants are offered a ticket good for free fare on the return portion of their journey. Some merchants require a minimum purchase (usually \$5) before giving a customer a free ride

coupon. The merchants then pay the transit property for each ride made, with the transit property allowing a 5 percent discount. The effect of this program is minor. If anything, the merchants seem to be giving free rides to people that normally patronize their stores and ride the bus. It would be good to remember the implications of the Premack Principle discussed in Chapter 2 (using a behavior which naturally occurs at a high frequency to reinforce the occurrence of a low frequency behavior). According to this perspective, shopping should be used as an incentive for riding transit, rather than vice versa. Therefore, it is very important that the goals of an incentive program be made clear in the beginning. If increased transit patronage was the goal of this program, one would not expect the incentive to be effective. Other goals may be met, however, such as developing positive relations with the merchants, increasing bulk ticket sales to merchants, or shifting patronage from one store to another. Some of these goals may be as important to the transit property as increased ridership, but those initiating such programs should make these goals explicit and take particular note of the impact the incentives will have.

D. Odds On Receipt of a Fare-Related Incentive

The "Wild Card Bus" was a promotional effort in Pittsburgh, Pennsylvania, which offered patrons odds on a fare-related

incentive. This program involved a normally marked bus that changed its route on a daily basis. Passengers boarding the "Wild Card Bus" were met with a fare box decorated like a joker card. Having "won," these passengers were allowed to ride free of charge. This project is an example of giving consumers odds on a fare-related incentive for the response of boarding a bus.

The effect of the "Wild Card Bus" project on ridership is difficult to assess because relatively few passengers on any given day received an incentive. Furthermore, these passengers had planned to use the bus regardless of the free fare, because the odds of receiving the free fare (one bus out of the entire Pittsburgh fleet) were very small. Indeed, it is very unlikely that a potential transit user would be persuaded to try transit on the slim possibility that he would get to ride the "Wild Card Bus". However, rather than attempting to increase ridership per se, the program was designed primarily as a promotion to acknowledge that the transit property appreciated the patronage of its regular customers.

The Case Studies: What's Right and What's Wrong

The variety of promotional efforts made by transit properties to encourage transit ridership has been illustrated by the case studies presented. A considerable amount of innovation is evident, but an examination of these efforts indicates a number of areas in which improvements can be made.

The most significant shortcoming of these marketing programs was the lack of dedicated evaluation. Essentially, a promotional program is an experiment through which management can test the effectiveness of techniques in achieving stated goals. When evaluation is included as a final phase of a program, management gains the knowledge to confidently apply, modify, or discard the program when similar situations are to be addressed. Without evaluation, management has little way of knowing whether objectives were successfully achieved. In the case studies, evaluation was frequently seen as an extravagance attached only to such large-scale projects as federally sponsored demonstrations. This is not the case. While a detailed, well-controlled evaluation can entail extensive data collection and analysis and consume valuable man-hours, adequate data are often already at hand. A sufficient evaluation may demand no more than several hours of advance planning and some time spent with a calculator, analyzing ridership figures after the termination of the program. The advance work would consist of giving explicit attention to two areas: (1) clearly stating the goals and objectives of the program, and (2) determining how the program can be monitored to determine whether the goals and objectives have been met. More detailed treatment of these issues will be presented in the next chapter. Adequate evaluation of a program cannot be accomplished, however, unless the objectives of the program and the criteria for successful attainment of those objectives are clearly stated in advance. The

scope of the evaluation is not limited to effectiveness. It is important to know not only the extent to which objectives are achieved, but also at what cost the objectives are achieved. From a management perspective, cost-effectiveness is the single most useful criterion in determining the value of any program.

Not to be overlooked in improving the cost-effectiveness of a promotion are external sources of support. Several case studies illustrate exceptional skill in incorporating private enterprise in the development and execution of promotional programs. A good example of this occurred in Portland, Oregon, where a radio station paid for a car in exchange for promotion of the station. If short-term economic incentive programs are to be run repeatedly in the future in a cost-effective manner, the incorporation of resources from businesses that benefit from public transit will strengthen the economic vitality of such programs. If these programs are seen as a burden on the ever-constrained transit budgets, short-term economic incentive programs will quickly become extinct. Private enterprise benefits from transit and knows it. Involve businesses and they will often contribute to the design of a much better program. One caution, however, is not to let the goals of the private sector involvement override or conflict with the transit property's goals.

Returning to the categorization of the case studies presented in Table 1, several points

can be made which relate to the conceptual or theoretical nature of the programs as opposed to the management perspectives just discussed. First, it is immediately apparent that a number of behaviors are being reinforced in these programs beyond those related to ridership. Aside from reinforcing "boarding a bus" and "buying a pass," incentives were provided for patronizing stores. Other programs, not described in detail, offered incentives for patronizing banks, attending talks about transit, or contributing suggestions for color schemes of buses. Indeed, Table 1 represents a selected list; if a representative sample of promotions were presented, it would be seen that most incentives were distributed without regard for the target behavior the transit system desired to promote. If it was the intent of these programs simply to distribute as many incentives (such as free rides) to individuals as possible, independent of a desire to better manage ridership, then these programs are fine. However, if the intent was to encourage transit use, the programs are less than optimal. Psychological theory has demonstrated many times the importance of distributing an incentive contingent upon the desired or target behavior. Giving a transit pass to a bank customer, for example, tends to encourage "bank patronage" by people already interested in transit. However, to increase transit patronage, the incentive should be dependent on transit use. Then people will board the bus to get the incentive rather than just "patronize the bank." Also, more attention could be given to the behaviors used

to reinforce transit riding (i.e., the Premack Principle). Behaviors that occur naturally at a high rate (e.g., shopping) should be employed as incentives for transit riding.

It is recognized that many of the programs giving incentives to customers for "other responses" were well intentioned and indeed designed to encourage "bank patronage" as well as to increase ridership and publicity about transit. Yet they were less than optimally designed. It is possible to develop a program that could maximally increase both bank patronage and transit use. Transit patrons exhibiting the desired behavior of boarding a bus could receive a ticket for discounts on a checking account, a savings bond, and so on. Individuals then would board buses and patronize the bank in order to receive the full incentive. An example of this type of promotion program is illustrated by the Spokane, Bridgeport, and University Park case studies (see pages 18, 19, 23), in which patrons received tokens as they boarded certain buses. These tokens were good for discounts on merchandise at downtown stores.

A second important suggestion is that more attention should be paid to the schedule on which incentives are distributed. Most of the free transit programs conducted to date have distributed free transit with a 100 percent guarantee of receiving the incentive. However, several case studies, most notably the Duluth "Big Bash" and Des Moines off-peak project, have successfully employed incentive programs with less than 100 percent odds of

receiving a incentive. Research in reinforcement theory has demonstrated repeatedly that the distribution of incentives on less than a 100 percent schedule results in behavior responses as strong or stronger than distributing incentives on a 100 percent schedule. Results of the University Park studies suggest that these findings will hold for transit promotions also. These findings suggest that the cost-effectiveness of future short-term economic incentive programs can be greatly improved by distributing incentives with less than 100 percent odds, since a stronger response (riding the bus, buying a pass) will be obtained, while only a fraction of the economic incentives needs to be distributed.

It is important, however, to insure that a regular rider will have a reasonable opportunity to receive an incentive. If incentives are given out infrequently and potential users feel they have little chance of receiving one, the program may not be successful in influencing the desired behaviors.

Finally, two additional points can be made from the perspective of reinforcement theory. First, very little attention has been paid to the issue of response shaping: increasing the frequency with which a target behavior occurs or gradually increasing the difficulty of the target behavior. Shaping could probably be best emphasized through the use of successive short-term economic incentive programs in which the contingencies placed on receiving

the incentives gradually become more stringent. A good example of shaping was presented on page 7 in which bus riding during a special event first received incentives. Gradually, the incentives became contingent on regular riding.

Second, very little attention (indeed, none in the studies reviewed here) has been paid to the use of disincentives for the occurrence of other, undesired behaviors (e.g., driving an automobile in the CBD). Granted, in the past, such programs have not been politically feasible. However, if support for public transit increases in the future and more importance is placed on modifying travel behavior, the use of disincentives may be feasible in specific situations. Although not

universally applicable, the possibility of using disincentives should not be ignored. The use of incentives and disincentives together can be expected to result in even greater behavior changes than the use of incentives alone.

From the marketing perspective, it must be stressed again that short-term economic incentive programs such as those just described should be implemented only if the service being provided is considered to be acceptable. This is not meant as a criticism of any of the transit systems reviewed here (indeed, many of these systems are well known for the excellent services they provide), but only to emphasize that promotion is not a substitute for good service.

CHAPTER 4

How to Develop Short-Term Economic Incentive Programs

HOW TO DEVELOP SHORT-TERM ECONOMIC INCENTIVE PROGRAMS

In the preceding chapters, a number of case studies involving the use of short-term economic incentive programs for promoting transit were reviewed. This chapter presents a decision-making procedure that a manager can follow to decide whether an economic incentive program should be used in a particular system. The steps of the procedure include a clear statement of the problem the manager wishes to address, a detailed description of the current operation, a statement of program objectives, an explication of the criteria for choosing an alternative and the generation of alternatives, and the implementation and evaluation of the chosen alternative. To emphasize that economic incentives should be regarded as a specific promotional tool to be selected from a variety of marketing options, the following discussion will include the entire marketing mix (service, price, and promotion) the manager should consider when deciding upon any alternative. The chapter will conclude with an outline of the issues a manager should consider in designing a short-term economic incentive program if such a program is appropriate.

Statement of the Problem

The first step in the decision process is to clearly state the problem the manager wishes to address. If a marketing approach is appropriate, the problem can be stated in behavioral terms: What behaviors should be

increased or decreased to alleviate the problem? For the present purposes, the problem of interest is the management of ridership (e.g., increasing off-peak ridership or shifting ridership to alternative destinations).

Description of the Current Operation

To insure that the problem is well defined and that all feasible alternative solutions to the problem are considered, the entire system (or route, if only a route-specific promotion is being considered) should be described in detail according to the service, price, and promotion framework presented earlier. It must be emphasized that promotional efforts should be considered only if the service and price are satisfactory. Promotion of poor service only damages the credibility of the transit system and diminishes the impact of future promotional efforts.

A. Service Characteristics:

The manager should first take a critical and detailed look at the current service characteristics. Is the current basic level of service of the system or route satisfactory? This can be regarded as the first "cut-off" question in considering the implementation of any promotional efforts. This inspection should focus on the operational characteristics, capacity characteristics, and attributes of the service area population. The manager should be confident that the service being offered is

adequate before employing any promotional program. As a program develops, however, the manager should keep the dynamic nature of the service, price, and promotion relationships in mind, and be aware of the sensitivities of the hierarchy to changes in any of the relationships. Table 2 lists a few of the service characteristics which should be considered in evaluating the quality of the service being provided.

B. Price

The manager should inspect the fare structure and fare collection system for possible improvements. In this regard, the manager is referred to the discussion of structural vs. promotional pricing in Chapter 1. Though the attention of this report is on promotional pricing, the manager should not ignore any changes that may be needed in the basic fare structure. These structural fare changes may be implemented in conjunction with promotional pricing tactics.

C. Promotion

What promotional efforts have been undertaken by the system, and how successful have these efforts been? Management should consider all publicity and informational efforts maintained on a regular basis and any special promotional programs which have been conducted in the past.

Table 2 presents a list of questions to be answered concerning service, price, and

promotion. The questions are meant to serve as guidelines, examples, and suggestions, although they are by no means exhaustive. Naturally, the manager knows the particular strengths and weaknesses of a system and will see other important issues not mentioned here. If the manager is prompted to make the strengths and weaknesses of the system explicit, the outline has served its purpose.

The manager should now have a clear picture of the current level of service, the pricing structure, and past promotional efforts. The manager should now refine the problem in light of the detailed system description. Refining the problem statement will involve using the information on current operations to focus the problem statement on the particular aspects of the system believed by management to need improvement. For example, the original problem statement, "Too few riders during the off-peak," might be refined to read "Not enough senior citizens and housewives using Routes 7, 10, and 81 during the hours of 10 a.m. and 3:30 p.m. for shopping and medical trips." Given a clear, specific problem statement, preparing a statement of program objectives should be a straightforward procedure.

Objectives of the Proposed Program

Program objectives must clearly define the behavior that the program is meant to affect, the population that the program is to influence, and how the success or failure of

A. Service

Is it reliable?
Is equipment in good condition? In adequate supply?
Does the service meet the basic needs of the service area population by:
--serving necessary and important times?
--serving a reasonable set of origins and destinations?
Is the service accessible to most of the population of the area?

What excess capacity characteristics are present in the system?
Distinct peak/off-peak periods? Excess capacity during the peak periods?
Under-utilized route segments?
Excess directional capacity?

What are the characteristics of the service area population?
Can market segments be defined according to:
--socioeconomic and demographic characteristics?
--user vs. non-user characteristics?
--trip purposes?
--specific destination and trip patterns (independent of the destinations served by the system)?
--the relative service and fare sensitivities of different segments?

B. Price

What is the current fare structure?
Does the fare structure differentiate between markets?
If so, on what basis can markets be differentiated?
Are alternative fare prepayment schemes available?

Can the fare collection system be improved?
What payment methods are available? What methods have not been tried?
Have employers been involved in fare collection through:
--payroll deduction for the sale of passes?
--employer subsidy of pass purchases?

What portion of the current operating costs is covered by the fare box revenues?

C. Promotion

What is the level of awareness and knowledge of the system by the public?
Are bus stops clearly marked?
Is a telephone information system available?
--Is the telephone number widely distributed?
--What is the level of use of the telephone information system?
Is the distribution of route information adequate?

Have advertising campaigns been attempted?
What system-wide advertising efforts been conducted?
Have route-specific advertising campaigns been attempted?
What media have been employed?
What media have not been employed?
Have cooperative advertising campaigns with local merchants been implemented?
How successful have previous advertising efforts been?

What publicity efforts are maintained on a regular basis?
Are press releases distributed to local media regularly?
Are board meetings well attended by the press?

Have fare-related incentive programs been tried previously?
For what purpose?
What benefits were given to whom? How were they distributed?
What problems occurred?
How successful was the program?

the proposed program will be determined. To simplify this presentation, it will be assumed that management has determined that the service levels and pricing structure are adequate. Therefore, the discussion of objectives, generation of alternatives, and the choice of the best alternative will focus on the management of ridership through promotional efforts. The information generated in the system description will still be valuable, however, for specifying target behaviors and target populations and for determining the effectiveness of a promotional program.

Table 3 lists some of the issues to be considered in preparing a clear statement of the objectives of a proposed program.

Generation of Promotional Alternatives

At this step in the process, alternatives for solving the problem should be generated. Input from public interest groups and officials can be valuable at this point for generating approaches to a problem. Specific alternatives may be suggested by weaknesses pointed out in the system description. The service description may suggest that particular routes, destinations, or market segments should be addressed by the promotional campaign; the description of the price structure may suggest fare alternatives or passes which could be marketed to particular user groups. Necessary improvements in the distribution of route information may be discovered. A review of

Table 3. Specifying the Objectives of the Proposed Program

Do you wish to:

- increase knowledge of the system?
- increase overall ridership?
- have peak-period riders shift to riding at off-peak times?
- have current riders shift destinations?
- increase the number of new riders at off-peak times?
- increase the number of new riders on under-utilized route segments?
- increase the level of public support for transit?
- increase the level of private sector support for transit?

Who is the target population?

Can it be described by:

- socioeconomic and/or demographic characteristics?
- user/non-user status?
- specific trip purposes?

What changes must occur for the program to be considered successful?

- What criteria will be used to determine whether the program is successful?
- How will the program be monitored?

past promotions may pinpoint a successful program which could be adapted for the current problem. It should be emphasized that judgments regarding the feasibility of alternatives should be withheld for the time being. This is the time for the free expression of ideas and for visions of "ideal" solutions.

Choosing a Promotional Alternative

Throughout this section, a hierarchical decision procedure has emphasized, first, evaluation of service; then attention to price (fare structure and fare collection); and finally a consideration of promotion. It must also be emphasized that incentive programs should be considered only as a component of a fairly mature marketing program. The basic promotional tools of advertising and information distribution should be employed to insure public awareness of the system and its use. Incentive programs will work best as well-focused, targeted complements to an on-going marketing program, not as a primary promotional tool.

Promotion efforts may include both general publicity and advertising for the system as well as special efforts to distribute route and system information and conduct a pricing promotion. Examples of promotional strategies are given in Table 4. Obviously, these strategies are not exclusive, and should be used together in a promotional package.

Table 4. Examples of Promotional Strategies.

- *Distribute specific information to every residence within three blocks of a bus route.
- *Conduct a systemwide advertising campaign on the local TV station.
- *Give away T-shirts advertising the system.
- *Distribute press releases to the local media.
- *Place the telephone information system number in every pay telephone booth.
- *Conduct a short-term economic benefit on a particular, under-utilized route.

In choosing among promotional strategies, a manager should consider each alternative in terms of its efficiency in attaining the specific objectives of the program. Therefore, it becomes even more important to evaluate promotional alternatives in terms of their effects on target behaviors and target populations rather than simply in terms of costs or political implications. Whereas choices between service and price changes are frequently made on the basis of political or cost considerations, the relatively low cost of promotional efforts requires more thorough examination of the behavioral issues. Some questions to be considered are:

- A. Can the promotional alternative be expected to effect the target behavior specified in the program's objectives? As desirable as a particular alternative may be, it may be inappropriate for attaining a stated objective. Also to be considered at this point are other behaviors likely to occur besides the target behaviors (e.g., an increase in already crowded peak ridership). What are the consequences of these "side effects"?
- B. Is the alternative focused specifically on the target population? This consideration is important not only in terms of effectiveness and efficiency but also to control for unwanted effects of the program when it is applied too broadly. Avoid "scatter gun" approaches which make general offers without particular user groups in mind.
- C. Can the alternative be reasonably expected to have the desired effect on the targeted market segment? Service and fare elasticity curves for the market segment, as well as attitudinal information collected from surveys and previous experience, can provide the manager with information on the responsiveness of market segments to particular service or fare changes. For a review of disaggregate elasticity curves see Mayworm, Lago, and McEnroe, 1980.
- D. Will the expected results justify the cost of the program? Promotion is a tool for reaching an objective, and in the long term should be cost-free or

profit-making.

Finally, two very pragmatic considerations:

- E. Is the program politically feasible? Every manager is aware that transit decisions are made within a political context. Therefore, the manager must consider which groups will be affected by a change, including those groups outside the target population, and what the reactions to the program will be.
- F. Is the program financially feasible? All wishful thinking aside, can the system afford it? If an alternative has survived to this final question, however, the manager may want to look for support for the project through private cooperation of merchants and employees, or for ways to implement the changes on a smaller scale or on a more focused target group.

Now that a number of alternatives have been generated and the criteria for choosing the "most acceptable" alternative have been explicated, each alternative should be reviewed according to these criteria. Though the manager was encouraged to generate alternatives freely, he/she must now consider each alternative in light of the criteria and decide on the "best" or "most appropriate" program. The particular strategy a manager uses should be specific to the situation. Additional criteria should be added, and the criteria already suggested should be clarified to reflect the constraints affecting the manager's decisions. Assuming that the decision has been made to employ short-term

economic incentives, the next section will discuss how to design a short-term economic incentive program.

How to Design a Short-Term Economic Incentive Program

The success of a short-term economic incentive program depends on the careful design of the program and its evaluation prior to implementation. If an incentive program has been decided upon by the management, several issues should be considered in the initial design. These issues are summarized in Table 5. By responding to these issues explicitly when designing the incentive program, a manager can be assured that the program will meet its objectives efficiently and effectively. The remainder of the chapter will consider each of these issues in more detail.

A. Who should receive the benefits?

In designing the incentive program, an effort should be made to focus the distribution of benefits on the target population specified in the objectives of the program. Clearly defining the population being addressed, and understanding the benefits that this target population values will help to insure that the most gain will be made for the resources invested. Too broad a distribution of the incentives can result in incentives being given to groups to whom the benefits have little value, or in a large investment in highly valued items to use as incentives.

Table 5. Designing a Short-Term Economic Incentive Program

- A. Who should receive the incentives?
- B. What are the target behaviors the program is to effect?
- C. What incentives will be employed and how will they be distributed?
- D. When will the incentives be delivered?
- E. How can the incentive program make the most efficient use of the available resources?
- F. How can the manager be assured that revenues lost (if any) during the program will be recovered after the incentive program is over?
- G. How will the effects of the program, both beneficial and adverse, be evaluated?

B. What are the target behaviors the program is to effect?

The manager should decide on the behaviors he or she wishes to increase. The target behaviors stated in the program objectives should be the focus of the incentive program. The target behaviors may require modification so that they are reasonably simple and do not involve drastic and immediate behavior changes. Simplicity requires that the desired behavior not consist of several successive

steps which must be performed to receive the incentive. For example, in the 6 Corners promotional campaign in Chicago, riders were required to purchase a bus token, make a purchase of \$5.00 or more at a participating merchant, show the clerk the bus token at the time of the purchase, receive a brass token worth \$.50 or \$1.00, and then exchange this brass token when making a purchase at another participating store. This program may have required too many successive behaviors (five separate behaviors) on the part of the rider for the program to produce the desired results.

Moreover, a program should not be expected to produce drastic and immediate changes in behavior. The objective may be to increase the number of people who ride every day, but the target behavior for the incentive program should be more realistic, for example, getting a non-rider to try the bus for the trip to work for two days. This does not mean that the objective should be changed, but that the marketing program should try to reach the objective gradually, with the incentive program as the first step to be followed up with additional efforts (shaping, in reinforcement theory, see page 7).

C. What incentives will be employed and how are they to be distributed?

The manager also should decide on the types of benefits to deliver. The manager should choose a variety of benefits which will:

1. Be viewed as being of value by the

target population. An incentive program can be undermined by overeconomizing on the value of the benefits or by not considering the particular values of the target population.

2. Satisfy a variety of consumer preferences. Even if the specification of the target population is well focused, the program should include a number of different benefits which will be valued by the population.

D. When should the incentive be delivered?

The incentive program should be designed so that receiving the benefits is associated with the performance of the target behavior. This requires that the benefit (which may be a coupon redeemable at a store) be given out to the rider immediately upon the performance of the desired behavior. A delay in delivering the incentive weakens its effectiveness and may encourage unintended behaviors. For example, if a lottery program is implemented and the prize is not delivered for several months, winning the prize will have little impact on the target behavior.

An incentive program will be more effective and will make more efficient use of resources if the benefit is distributed with less than a 100 percent probability of anyone receiving the benefit upon any single performance of the target behavior. Distributing coupons randomly to every third rider on the average

can be expected to be more effective in increasing ridership than a program which gives free coupons to every rider on a given day. However, the probability of receiving a benefit should be reasonable enough to insure that regular riders will receive the benefit.

E. How can an incentive program make the most efficient use of the available resources?

There are several ways in which an incentive program can be designed to keep the costs as low as possible while still producing the desired results. The value of distributing the incentives according to some element of chance was just discussed. The manager should also consider other businesses which can realize benefits from the success of the program and recruit assistance from them. Merchants can benefit from increased transit ridership with increased patronage and sales and therefore may be willing to offer discounts on merchandise to transit riders. Employers, who may benefit by a reduction in the need to provide additional parking spaces (at a cost of \$6,000-\$10,000 per space) or by higher employee productivity, may be willing to subsidize employee passes or other benefits. This cooperation between the transit operators and the private sector can also be employed in maintaining many incentives over a long-term period. The costs of keeping incentive programs going could be transferred to merchants and employers in the service area. This kind of cooperation between the public and private sector is strongly encouraged as a method of

distributing costs. By distributing the costs of the program in this manner, the incentive program can become a part of the structural pricing system rather than just a short-term promotional pricing strategy (as discussed in Chapter 1). If handled properly, it can work to the benefit of all the parties involved.

Incentive programs should be used in conjunction with a coordinated advertising and publicity campaign. Advertising and publicity will provide information to the public on what benefits are being made available and how to receive the benefits. The public cannot be expected to respond to an incentive campaign if they are unaware of its existence. This is especially important in a program offering benefits with less than a 100 percent guarantee of receiving an incentive at any particular time. Advertising can inform the public of the nature of the program, without setting up unrealistic expectations on the part of the consumer.

Finally, if it cannot be kept in effect for the long term, the incentive program should be designed in such a manner that the incentives can be phased out. The success of the incentive program depends on the natural benefits of the behavior, such as relaxation, energy savings, and lower costs, taking over and continuing to promote the behavior. If this occurs, the incentive program will result in a long-term gain in ridership and revenues even though fare elasticity curves might show the elasticity to be less than 1.0. The results of a program conducted in State

College, Pennsylvania (described on page 27), are presented in Figure 13. These results illustrate that, although some revenues were lost during the short-term economic incentive program, farebox revenues after the termination of the program were much higher than the trend projected before the program was implemented. Gradually withdrawing the incentive program will result in greater maintenance of the desired behaviors. This fading can be accomplished in several ways. The odds of receiving the incentives can be lowered toward the end of the program, or the value of the benefits can be lowered. Since the long-range success of the incentive program depends on the maintenance of the desired behavior, it is only reasonable that these natural benefits be highlighted in the advertising and publicity.

Table 6 summarizes the suggestions made here for ensuring that a short-term economic incentive program will be successful.

F. Evaluating the Incentive Program

In the discussion of program objectives, the question was asked, what changes were necessary for the program to be considered successful and how would these changes be monitored. The importance of this evaluation effort cannot be overstressed. An evaluation will aid the manager in fine-tuning the incentive program to make certain that it is performing as desired. Also, in this time of tightening budgets, an evaluation can determine the merits of the program and its

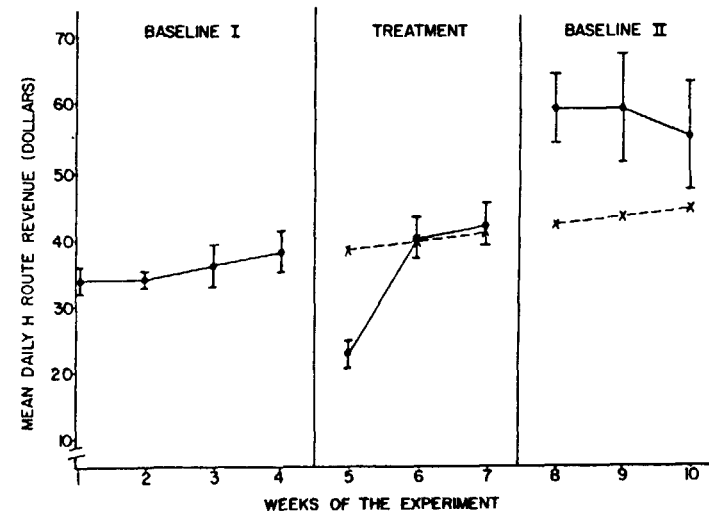


Figure 13. Illustration of revenue gains after termination of short-term economic incentive program.

cost effectiveness. For an evaluation to satisfy these needs, the data collected must be sensitive to changes in the target behavior, convey information on who is receiving the benefits, be easily obtainable with minimal additional manpower, and be reliable and objective.

It was stated earlier in this chapter that the objectives of the program must be specific and clearly stated. The importance of a clear statement of the objectives is emphasized here, since it is very difficult to judge the

Table 6. Summary of Strategies to Promote the Success of a Short-Term Economic Incentive Program

BE SURE TO

- +Encourage involvement of the private sector whenever possible.
- +Emphasize the natural benefits of transit riding.
- +Transfer the long-term distribution of some of the incentives to the private sector whenever possible.
- +Distribute incentives at less than 100% guarantee of receiving a benefit.
- +Focus the distribution of the benefits on the target population.
- +Keep the required behaviors simple to understand and to accomplish.
- +Use the incentive program in conjunction with other advertising and publicity.
- +Distribute a variety of benefits.
- +Clearly define objectives, including the target behaviors and target population.

+Approach the problem and objectives in terms of the entire service, price, and promotion mix, not just in terms of promotion.

AVOID:

- Promoting inadequate service.
- Making the reception of an incentive dependent on a response other than the desired target behavior.
- Delaying delivery of the incentive.
- Overpromising the likelihood of receiving any benefits.
- Regarding promotional efforts as end products in and of themselves.
- Considering short-term economic incentives in isolation from the entire marketing effort.
- Regarding incentive programs as substitutes for more basic, on-going marketing efforts.

success of a promotional program if the objectives are not clear. If management determines what standards must be met and how the program will be monitored at the same time that the objectives are stated, the process of evaluation will be much simpler.

Often, the data required to monitor the program's success already are available and not much additional data collection is required. If ridership and revenue data are collected on a route-by-route basis, the evaluation may involve simply organizing these data and deciding on appropriate controls. (Controls might be routes that do not receive the promotion, or data might be collected for similar time periods prior to the implementation of the program.) Naturally,

the dynamic environment in which transit operates precludes drawing conclusions that attribute ridership changes to a single cause, but well-designed controls can still provide sufficient information for judging the success of a program.

The data collected to evaluate a particular incentive program should be viewed not as isolated information giving support or criticism of a particular program, but as part of a growing body of information that a manager can utilize in planning future marketing and operations efforts. If evaluations are regarded as building one upon another, the costs will be outweighed by the benefits they provide to the operation of an efficient and effective transit system.

REFERENCES

- Everett, P. B. Reinforcement theory strategies for modifying transit ridership. In I. Altman, J. F. Wohlwill, and P. B. Everett (Eds.), Transportation and Behavior. New York: Plenum Press, 1981.
- Kotler, P. Marketing for Non-Profit Organizations. Englewood Cliffs, N. J.: Prentice-Hall, 1975.
- Kotler, P. Marketing Management: Analysis, Planning, and Control. 3rd ed. Englewood Cliffs, N. J.: Prentice-Hall, 1976.
- Mayworm, P., Lago, A., and McEnroe, J. M. Patronage Impacts of Changes in Transit Fares and Services. Report No. RR-135-1, Washington, D. C.: Urban Mass Transportation Administration, Office of Service and Methods Demonstration, September, 1980.
- Rachlin, H. An Introduction to Modern Behaviorism. 2nd ed. San Francisco: W. H. Freeman and Co., 1976.

NOTICE

This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

The United States Government does not endorse manufacturers or products. Trade names appear in the document only because they are essential to the content of the report.

This report is being distributed through the U.S. Department of Transportation's Technology Sharing Program.

DOT-T-88-05

DOT-T-88-05

TECHNOLOGY SHARING

A Program of the U.S. Department of Transportation